



[7590-01-P]

**NUCLEAR REGULATORY COMMISSION**

**[Docket Nos. 50-289 and 50-320; NRC-2020-0211]**

**Exelon Generation Company, LLC**

**Three Mile Island Nuclear Station, Units 1 and 2**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Environmental assessment and finding of no significant impact; issuance.

**SUMMARY:** The U.S. Nuclear Regulatory Commission (NRC) is considering issuance of exemptions that would permit the licensee to reduce its emergency planning (EP) activities at Three Mile Island Nuclear Station, Unit 1 (TMI-1) and Unit 2 (TMI-2). Specifically, the licensee is seeking exemptions that would eliminate the requirements for the licensee to maintain offsite radiological emergency plans and reduce some of the onsite EP activities based on the reduced risks at TMI-1, which is permanently shut down and defueled, and at TMI-2, which has a possession-only license. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities would be retained. In addition, offsite EP provisions would still exist through State and local government use of a comprehensive emergency management plan process, in accordance with the Federal Emergency Management Agency's (FEMA's) Comprehensive Preparedness Guide (CPG) 101, "Developing and Maintaining Emergency Operations Plans." The NRC staff is issuing a final Environmental Assessment (EA) and final Finding of No Significant Impact (FONSI) associated with the proposed exemptions.

**DATES:** The EA and FONSI referenced in this document are available on **[INSERT DATE OF PUBLICATON IN *FEDERAL REGISTER*]**.

**ADDRESSES:** Please refer to Docket ID **NRC-2020-0211** when contacting the NRC about the availability of information regarding this document. You may obtain publicly-available information related to this document using any of the following methods:

- **Federal Rulemaking Web Site:** Go to <https://www.regulations.gov> and search for Docket ID **NRC-2020-0211**. Address questions about Docket IDs in Regulations.gov to Jennifer Borges; telephone: 301-287-9127; e-mail: Jennifer.Borges@nrc.gov. For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.

- **NRC's Agencywide Documents Access and Management System (ADAMS):** You may obtain publicly-available documents online in the ADAMS Public Documents collection at <https://www.nrc.gov/reading-rm/adams.html>. To begin the search, select "Begin Web-based ADAMS Search." For problems with ADAMS, please contact the NRC's Public Document Room reference staff at 1-800-397-4209, 301-415-4737, or by e-mail to [pdr.resource@nrc.gov](mailto:pdr.resource@nrc.gov). For the convenience of the reader, instructions about obtaining materials referenced in this document are provided in the **AVAILABILITY OF DOCUMENTS** section of this document.

**FOR FURTHER INFORMATION CONTACT:** Theodore Smith, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; telephone: 301-415-6721; e-mail: [Theodore.Smith@nrc.gov](mailto:Theodore.Smith@nrc.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Introduction**

By letter dated June 20, 2017 (ADAMS Accession No. ML17171A151), pursuant to paragraph 50.82(a)(1)(i) of title 10 of the *Code of Federal Regulations* (10 CFR), Exelon Generation Company, LLC (Exelon) certified to the NRC that it planned to permanently cease power operations at TMI-1 on or about September 30, 2019. TMI-1 subsequently permanently ceased power operations on September 20, 2019. By letter

dated September 26, 2019 (ADAMS Accession No. ML19269E480), pursuant to 10 CFR 50.82(a)(1)(ii), Exelon certified to the NRC that all fuel had been permanently removed from the TMI-1 reactor vessel and placed in the spent fuel pool (SFP) as of September 26, 2019. Accordingly, pursuant to 10 CFR 50.82(a)(2), the TMI-1 renewed facility operating license no longer authorizes operation of the reactor or emplacement or retention of fuel in the reactor vessel. The facility is still authorized to possess and store irradiated (i.e., spent) nuclear fuel. Spent fuel is currently stored onsite at the TMI-1 facility in the SFP. A dry cask independent spent fuel storage installation (ISFSI) is under construction onsite to store the TMI-1 spent fuel.

TMI-2 has a possession-only license and is currently maintained in accordance with the NRC-approved SAFSTOR condition (method in which a nuclear facility is placed and maintained in a condition that allows it to be safely stored and subsequently decontaminated) known as post-defueling monitored storage. Spent fuel for TMI-2 has already been removed from the site, though residual contamination and radiological materials exist. Therefore, TMI-2 is also permanently shut down and defueled. Exelon maintains the EP responsibilities for TMI-2, which is owned by First Energy Corporation, through a service agreement.

By letter dated July 1, 2019 (ADAMS Accession No. ML19182A104), as supplemented by letters dated October 9, 2019, and December 10, 2019 (ADAMS Accession Nos. ML19282C285 and ML19344C115, respectively), Exelon requested exemptions from certain EP requirements in 10 CFR part 50 for TMI-1 and TMI-2.

The NRC regulations concerning EP do not recognize the reduced risks after a reactor is permanently shut down and defueled. As such, a permanently shut down and defueled reactor must continue to maintain the same EP requirements as an operating power reactor under the existing regulatory requirements. To establish a level of EP commensurate with the reduced risks of a permanently shut down and defueled reactor,

the licensee requires exemptions from certain EP regulatory requirements before it can change its emergency plans.

The NRC is considering issuing to the licensee exemptions from portions of 10 CFR 50.47, "Emergency plans," and appendix E to 10 CFR part 50, "Emergency Planning and Preparedness for Production and Utilization Facilities," which would eliminate the requirements for the licensee to maintain offsite radiological emergency plans in accordance with 44 CFR, "Emergency Management and Assistance," part 350, "Review and Approval of State and Local Radiological Emergency Plans and Preparedness," and reduce some of the onsite EP activities based on the reduced risks 488 days (approximately 16 months) after TMI-1 has permanently ceased power operations.

Consistent with 10 CFR 51.21, the NRC has determined that an EA is the appropriate form of environmental review for the requested action. Based on the results of the EA, which is provided in Section II of this document, the NRC has determined not to prepare an environmental impact statement for the proposed action, and is issuing a FONSI.

## **II. Environmental Assessment**

### *Description of the Proposed Action*

The proposed action would exempt the licensee from (1) certain standards as set forth in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors; (2) requirements in 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway emergency planning zones (EPZs) for nuclear power reactors; and (3) certain requirements in 10 CFR part 50, appendix E, section IV, which establishes the elements that make up the content of emergency plans. The proposed action of granting these exemptions would eliminate the requirements for the licensee to maintain offsite radiological emergency plans in accordance with 44 CFR part 350 and

reduce some of the onsite EP activities at TMI-1 and TMI-2, based on the reduced risks once the TMI-1 reactor has been permanently shut down for a period of 488 days. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities would be retained to an extent consistent with the approved exemptions. Additionally, if necessary, offsite protective actions could still be implemented using a comprehensive emergency management plan (CEMP) process. A CEMP in this context, also referred to as an emergency operations plan (EOP), is addressed in FEMA's CPG 101, "Developing and Maintaining Emergency Operations Plans." The CPG 101 is the foundation for State, territorial, tribal, and local EP in the United States under the National Preparedness System. It promotes a common understanding of the fundamentals of risk-informed planning and decision making, and assists planners at all levels of government in their efforts to develop and maintain viable, all-hazards, all-threats emergency plans. An EOP is flexible enough for use in all emergencies. It describes how people and property will be protected; details who is responsible for carrying out specific actions; identifies the personnel, equipment, facilities, supplies, and other resources available; and outlines how all actions will be coordinated. A CEMP is often referred to as a synonym for "all-hazards" planning. The proposed action is in accordance with the licensee's application dated July 1, 2019, as supplemented by letters dated October 9, 2019, and December 10, 2019.

#### *Need for the Proposed Action*

The proposed action is needed for the licensee to revise the TMI-1 and TMI-2 Emergency Plan once the TMI-1 reactor has been permanently shutdown for a period of 488 days. The EP requirements currently applicable to TMI-1 and TMI-2 are for an operating power reactor. Since the certifications for permanent cessation of operations and permanent removal of fuel from the reactor vessel have been docketed for TMI-1, pursuant to 10 CFR 50.82(a)(2), the TMI-1 license no longer authorizes use of the facility

for power operation or emplacement or retention of fuel into the reactor vessel and, therefore, the occurrence of postulated accidents associated with TMI-1 reactor operation is no longer credible. Since the TMI-2 license had already been modified to allow possession but not operation before the effective date of the rule requiring these certifications, pursuant to 10 CFR 50.82(a)(2), the certifications have been deemed submitted for TMI-2 as well and, therefore, the occurrence of postulated accidents associated with TMI-2 reactor operation is no longer credible. However, there are no explicit regulatory provisions distinguishing EP requirements for a power reactor that has been permanently shut down and defueled from those for an operating power reactor.

In its exemption request, the licensee identified four possible radiological accidents at TMI-1 and TMI-2 in their permanently shutdown and defueled condition. These are: (1) a fuel-handling accident; (2) fire in the TMI-2 reactor building with the reactor building purge system in operation; (3) a loss of SFP normal cooling (i.e., boil off); and (4) an adiabatic heat up of the hottest fuel assembly. The NRC staff evaluated these possible radiological accidents in the Commission Paper (SECY) 20-0041, "Request by Exelon Generation Company, LLC for Exemptions from Certain Emergency Planning Requirements for the Three Mile Island Nuclear Station," dated May 5, 2020 (ADAMS Package Accession No. ML19311C762). In SECY-20-0041, the NRC staff verified that the licensee's analyses and calculations provided reasonable assurance that if the requested exemptions were granted, then: (1) for a design-basis accident (DBA), an offsite radiological release will not exceed the early phase protective action guides (PAGs) at the site boundary, as detailed in Table 1-1 to the U.S. Environmental Protection Agency's (EPA's), "PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents," EPA-400/R-17/001, dated January 2017, and (2) in the highly unlikely event of a beyond DBA resulting in a loss of all SFP cooling, there is sufficient time to initiate appropriate mitigating actions, and

in the event a radiological release has or is projected to occur, there would be sufficient time for offsite agencies to take protective actions using a CEMP to protect the health and safety of the public if offsite governmental officials determine that such action is warranted. The Commission approved the NRC staff's recommendation to grant the exemptions based on this evaluation in its Staff Requirements Memorandum (SRM) to SECY-20-0041, dated July 27, 2020 (ADAMS Accession No. ML20209A439).

Based on these analyses, the licensee states that complete application of the EP rule to TMI-1 and TMI-2 488 days after TMI-1's permanent cessation of power operations would not serve the underlying purpose of the rule or is not necessary to achieve the underlying purpose of the rule. The licensee also states that it would incur undue costs in the application of operating plant EP requirements for the maintenance of an emergency response organization in excess of that actually needed to respond to the diminished scope of credible accidents for TMI-1 and TMI-2 488 days after TMI-1's permanent cessation of power operations.

#### *Environmental Impacts of the Proposed Action*

The NRC staff has completed its evaluation of the environmental impacts of the proposed action.

The proposed action consists mainly of changes related to the elimination of requirements for the licensee to maintain offsite radiological emergency plans in accordance with 44 CFR part 350 and reduce some of the onsite EP activities at TMI-1 and TMI-2, based on the reduced risks once the TMI-1 reactor has been permanently shutdown for a period of 488 days. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities will be retained and offsite EP provisions to protect public health and safety will still exist through State and local government use of a CEMP.

With regard to potential nonradiological environmental impacts, the proposed action would have no direct impacts on land use or water resources, including terrestrial and aquatic biota, as it involves no new construction or modification of plant operational systems. There would be no changes to the quality or quantity of nonradiological effluents and no changes to the plants' National Pollutant Discharge Elimination System permits would be needed. In addition, there would be no noticeable effect on socioeconomic conditions in the region, no environment justice impacts, no air quality impacts, and no impacts to historic and cultural resources from the proposed action. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

With regard to potential radiological environmental impacts, as stated above, the proposed action would not increase the probability or consequences of radiological accidents. Additionally, the NRC staff has concluded that the proposed action would have no direct radiological environmental impacts. There would be no change to the types or amounts of radioactive effluents that may be released and, therefore, no change in occupational or public radiation exposure from the proposed action. Moreover, no changes would be made to plant buildings or the site property from the proposed action. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

#### *Environmental Impacts of the Alternatives to the Proposed Action*

As an alternative to the proposed action, the NRC staff considered the denial of the proposed action (i.e., the "no-action" alternative). The denial of the application would result in no change in current environmental impacts. Therefore, the environmental impacts of the proposed action and the alternative action are similar.

#### *Alternative Use of Resources*

There are no unresolved conflicts concerning alternative uses of available



resources under the proposed action.

#### *Agencies or Persons Consulted*

No additional agencies or persons were consulted regarding the environmental impact of the proposed action. On August 24, 2020, the Commonwealth of Pennsylvania representative was notified of this EA and FONSI.

### **III. Finding of No Significant Impact**

The licensee has proposed exemptions from: (1) certain standards in 10 CFR 50.47(b) regarding onsite and offsite emergency response plans for nuclear power reactors; (2) the requirement in 10 CFR 50.47(c)(2) to establish plume exposure and ingestion pathway EPZs for nuclear power reactors; and (3) certain requirements in 10 CFR part 50, appendix E, section IV, which establishes the elements that make up the content of emergency plans. The proposed action of granting these exemptions would eliminate the requirements for the licensee to maintain offsite radiological emergency plans in accordance with 44 CFR part 350 and reduce some of the onsite EP activities at TMI-1 and TMI-2, based on the reduced risks once the TMI-1 reactor has been permanently shutdown for a period of 488 days. However, requirements for certain onsite capabilities to communicate and coordinate with offsite response authorities will be retained and offsite EP provisions to protect public health and safety will still exist through State and local government use of a CEMP.

The NRC is considering issuing the exemptions. The proposed action would not significantly affect plant safety, would not have a significant adverse effect on the probability of an accident occurring, and would not have any significant radiological or nonradiological impacts. This FONSI incorporates by reference the EA in Section II of this document. Therefore, the NRC concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the NRC has determined not to prepare an environmental impact statement for the proposed action.

The related environmental document is the “Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding Three Mile Island Nuclear Station, Unit 1,” NUREG-1437, Supplement 37, and "Environmental Impact Statement Related to Decontamination and Disposal of Radioactive Wastes Resulting from March 28, 1979 Accident Three Mile Island Nuclear Station, Unit 2," NUREG-0683 (Vol. I, and Vol. II), which provide the latest environmental review of current operations and description of environmental conditions at TMI-1 and TMI-2.

#### IV. Availability of Documents

The documents identified in the following table are available to interested persons through one or more of the following methods, as indicated.

Document	ADAMS Accession No. / Web link
Federal Emergency Management Agency, Developing and Maintaining Emergency Operations Plans, Comprehensive Preparedness Guide (CPG) 101, Version 2.0, November 2010	<a href="https://www.fema.gov/sites/default/files/2020-05/CPG_101_V2_30NOV2010_FINAL_508.pdf">https://www.fema.gov/sites/default/files/2020-05/CPG_101_V2_30NOV2010_FINAL_508.pdf</a>
Gallagher, Michael P., Exelon Generation Company, LLC, “Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR part 50, appendix E,” July 1, 2019	ML19182A104
Gallagher, Michael P., Exelon Generation Company, LLC, “Supplement to Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR part 50, appendix E and License Amendment Request for Proposed Changes to the Three Mile Island Emergency Plan for Permanently Defueled Emergency Plan and Emergency Action Level Scheme,” October 9, 2019	ML19282C285
Gallagher, Michael P., Exelon Generation Company, LLC, “Response to Request for Additional Information (RAI) Regarding Request for Exemptions from Portions of 10 CFR 50.47 and 10 CFR part 50, appendix E,” December 10, 2019	ML19344C115
Fewell, J. Bradley, Exelon Generation Company, LLC, “Certification of Permanent Cessation of Power Operations for Three Mile Island Nuclear Station, Unit 1,” June 20, 2017	ML17171A151

Gallagher, Michael P., Exelon Generation Company, LLC, "Certification of Permanent Removal of Fuel from the Reactor Vessel for Three Mile Island Nuclear Station, Unit 1," September 26, 2019	ML19269E480
U.S. Environmental Protection Agency, PAG Manual: Protective Action Guides and Planning Guidance for Radiological Incidents, January 2017	<a href="https://www.epa.gov/sites/production/files/2017-01/documents/epa_pag_manual_final_revisions_01-11-2017_cover_disclaimer_8.pdf">https://www.epa.gov/sites/production/files/2017-01/documents/epa_pag_manual_final_revisions_01-11-2017_cover_disclaimer_8.pdf</a>
SECY-20-0041, "Request by Exelon Generation Company, LLC for Exemptions from Certain Emergency Planning Requirements for the Three Mile Island Nuclear Station," May 5, 2020	ML19311C762 (Package)
Staff Requirements Memorandum to SECY-20-0041, "Request by Exelon Generation Company, LLC for Exemptions from Certain Emergency Planning Requirements for the Three Mile Island Nuclear Station," July 27, 2020	ML20209A439
NUREG-1437, Supplement 37, "Generic Environmental Impact Statement for License Renewal of Nuclear Plants: Regarding Three Mile Island Nuclear Station, Unit 1," June 2009	ML091751063

Dated: September 17, 2020.

For the Nuclear Regulatory Commission.

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